

T2-00002

**Application Number:** T2-00002

**Scientific Score:** 60 or below

**Title:** Stem Cell Training Program at [REDACTED]

*Specific names of individuals and institutions are blacked out to preserve applicant confidentiality where possible.*

### **Proposal Abstract as Submitted by Applicant**

The objective of the [REDACTED] Stem Cell Training Program is to develop a new generation of basic scientists and clinicians trained to conduct research on stem cells. The program will draw 2-4 predoctoral trainees from the [REDACTED] Graduate School and 4-6 postdoctoral trainees from the basic sciences and clinical oncology disciplines at [REDACTED]. Those who show a genuine interest in stem cell research, as determined by a written proposal and personal interviews with our Internal Advisory Committee (IAC), will be admitted into the program. Trainees will work with one of 16 participating Laboratory Mentors. Multidisciplinary research projects will be in the general areas of stem cell biology, basic studies of early development, and applied studies of stem cell transplant and replacement therapy. Each of these broad areas is intersected by several stem cell systems being studied in mentors' labs, which are themselves overlapping and synergistic – hematopoietic stem cells, embryonic stem cells, neural stem cells, mesenchymal stem cells, cancer stem cells, and islet stem cells. Specific trainee projects will be approved by the IAC. Trainees will be required to take courses in Stem Cell Biology and Bioethics of Stem Cells plus one elective course on Nuclear Transfer, GMP/GLP Production, or Pathobiology of Disease. Trainees will participate in a bi-weekly Stem Cell Journal/Data Club that will serve as the central venue for exchange of ideas and broadening of perspective among trainees and mentors alike. They will attend a distinguished speaker series focused on stem cells, in addition to attending the variety of seminars at [REDACTED] having to do with other areas of basic science and translational research. There are several unique characteristics of [REDACTED] that make it ideal as a center for a Stem Cell Training Program: 1) a strong clinical emphasis on transplantation and cell-based therapies; 2) a pre-existing programmatic commitment to stem cell research, both basic and clinical; 3) nationally-recognized programs in hematopoietic cell transplantation, islet cell transplantation, and GMP/GLP production of cell-based products; 4) functioning collaborations between physicians and scientists; and 5) a proven record of training predoctoral, postdoctoral, and clinical fellows in the setting of formalized training programs.

### **Benefit of this Program to California**

This program will benefit the people and the state of California by providing high-quality training in the scientific, clinical, social, and ethical aspects of stem cell research to the scientists and clinicians who will develop and apply future therapies in this rapidly emerging field.

### **Summary of Review**

This type II application seeks to develop a comprehensive training program for pre-doctoral and post-doctoral trainees in stem cell biology. The program proposes unique

courses in specialized applications such as GMP/GLP production and nuclear transfer. The training environment has focal areas of excellence in hematopoietic cell and islet cell transplantation, but outside of these areas quality is more uneven. The graduate school already offers a stem cell biology course. However, the leader of the course lacks independent grant support and independent publications. The proposed ethics course is an expansion of an existing course in the *Responsible Conduct of Research* by addition of three lectures related to stem cells. This seems like an inadequate strategy for addressing training in the social, legal, and ethical aspects of stem cell research. The program director is an accomplished scientist who has made important contributions to biomedical research and has served as the founding dean for the graduate school. The co-director has an active laboratory program and has various administrative and leadership responsibilities. Most of the proposed mentors are not experts in the stem cell field, and several are quite junior without external support. Each proposed mentor has identified a stem cell project, but in many cases it represents a new avenue of research for the laboratory and is not reflected in prior publications or grant funding in this area. The qualifications of the training faculty are therefore rather mixed and a weakness of the proposal. The program will draw pre-doctoral trainees from a relatively new graduate program, which was initiated in 1994 and accredited in 2001.

### **Overall Strengths and Weaknesses**

This is a program in development and, although worthwhile, is not at the level of other applications. The institution provides a strong overall environment for training in transplantation and cell-based therapies, but not necessarily in stem cell biology. Weaknesses are the junior status and experience of many of the proposed mentors and the lack of developed research in stem cell biology.

### **Recommendations**

Not recommended for funding at this time.

	Pre	Post	Clinical	Total
Fellows Requested:	2 to 4	4 to 6	0	6 to 10
Fellows Recommended:	0	0	0	0

	Year 1	Total
Budget Requested:	\$ 433,400	\$ 1,848,000
Budget Recommended:	0	0